Does the Governance by Academics influence Firms' Financial Performances? Evidence from New-Technology Based Firms (NTBFs)

Does the Governance by Academics influence Firms' Financial Performances? Evidence from New-Technology Based Firms (NTBFs).

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Abstract

Objectives: Based on a sample of Italian New Technology Based Firms, hereafter NTBFs, grown in a University incubator, this paper aims to verify if the presence of academic scholars in the board of directors of these firms can strengthen or weaken their economic and financial performances.

Prior Work: Previous studies focused the various services offered by incubators and the role played by Universities in sustaining and fostering the growth of young entrepreneurial firms. Some researches pointed out the importance of university link and knowledge flows on the overall corporate performance and showed that the entrepreneurial attitude of academics is related to effective technology transfer and to the commercialization of research outputs. In our opinion, there is a lack of research about the governance of NTBFs, especially about the characteristics of the people involved.

Approach: This research has been carried out empirically on a sample of NTBFs graduated from I3P, the Turin Polytechnic's Incubator, where I3P stands for "Incubatore Imprese Innovative Politecnico".
We tested the following hypotheses:

- H1: *Governance by academics might lead to lower NTBF's financial performance.*
- H2: *Higher is the academic status of the scholar involved in the governance, lower is the financial performance of the NTBF.*

In order to analyse economic and financial performances of NTBFs, financial data were collected from the related financial statements. In order to analyse the "governance by academics" we collected information both from financial statements and the web, then we crosschecked the data through an interview with the I3P CEO. All data were then analysed using SPSS.

Results: The analysis of our findings points out that, in a certain way, a little negative correlation can be found between governance by academics and financial performances of NTBFs. This allows to partially validate H1 "Governance by academics might lead to lower NTBF's financial performance". We weren't instead able to validate H2 "Higher is the academic status of the scholar involved in the governance, lower is the financial performance of the NTBF".

Implications: We can say that, given the crucial value of innovation for the NTBFs' survival, these results suggest that academics may have an important role in the governance of these firms. This could address the attention of Public Institutions, especially Universities and Polytechnics, for stating and issuing appropriate policies regarding external commitments eventually involving their staff.

Value: This study tries to contribute to the considerable debate developed, in the recent years, about the outcomes of firm–university linkages in terms of economical and financial performance of resulting NTBFs.

1. Introduction.

The creation of laboratories and research centres, the establishment of incubators and scientific/technological parks to support start-up firms are typical ways in which Universities contribute to the growth of today's economy. Such activities must provide an effective technology transfer leading to the realisation and commercialization of new ideas arising from science advances. Incubators and scientific/technological parks offer different advantages to start-up firms like, for example, sites and offices, laboratories, administrative and logistic services, etc. in order to be, definitely, the right environment for the creation and the development of business ideas.

Usually start-up firms stay for an initial development stage in the incubator and then, when more mature, they leave. Some of these firms continue their growth even out of the incubator but some other, due to lack of survival skills, are not able to continue their business. At the same time, once left the incubator, some firms obtain satisfying financial performances while others earn just some little profits and are not able to sustain the initial innovation assumptions. Although the possible internal and external factors who lead to different financial performance might be different, we focus on the presence of academics in the governance of a sample of New Technology Based Firms grown in an important Italian University incubator.

2. Literature review and hypothesis development.

The Universities' role concerning entrepreneurial development and incubators has been investigated by different scholars within different points of view. A widespread literature exists about incubators and about the related entrepreneurial involved projects (Wright, 2003). Initial studies focused on the features of incubators (Allen, 1985) documenting the various services offered and the role played by Universities in sustaining and fostering the growth of young entrepreneurial firms. The function of University technology business incubators has been previously studied by providing conceptual frameworks for assessing and managing them (Mian, 1997) and by studying the relations between incubators and science parks as well.

Further studies developed some theoretical frameworks and taxonomies addressed to study university-industry relations (Bonaccorsi and Piccaluga, 1994). In the same field other scholars assessed the effects of business-university alliances on innovative output and financial performance (George *et al*, 2002) and pointed out the importance of university link and knowledge flows between different entities on the overall corporate performance of the firm (Aernoudt, 2004, Rothaermel and Thursby, 2005a, Phan *et al*., 2005).

In the Italian context, incubators have been only studied by assessing their effectiveness in terms of developing technology-based firms (NTBFs). It has been shown that on-incubator firms perform better than off-incubator firms (Colombo and Delmastro, 2002) and that the firms' propensity to a broad use of incubator's resources and support increases with the progression of their lifecycle (McAdam and McAdam, 2008).

Another interesting branch of research is related to academic spin-off companies (Lockett *et al*., 2005, Mustar *et al*., 2006), the study of national trends (Chiesa and Piccaluga, 2000) and the typologies of companies originated in Universities (Druilhe and Garnsey, 2004). Moreover, some best practices were developed for the management of universities' incubators by focusing on the venture capital activity in relation to the lifecycle of target firms (Wright *et al*., 2006). Finally, others scholars assessed the role played by intellectual transfers and studied knowledge management in an organizational perspective (Cesaroni and Piccaluga, 2005, Becker and Gassmann, 2006).

In our opinion, there is a lack of research concerning the study of the NTBFs' governance. Hence, in this paper we critically examine the governance of NTBFs with particular focus on the role played by academic scholars eventually involved in. Specifically, we aim to contribute to prior research by analysing the influence of the presence of academics on the financial performance of NTBFs born and grown in university incubators. In other words, the main objective of this research is to verify if the involvement of academics can strengthen or weaken the financial performances of a NTBF.

One previous study showed that the entrepreneurial attitude of academics can give positive performance outcomes in relation to effective technology transfers and to the commercialization of research outputs (Renault, 2006, Druilhe and Garnsey, 2007). Besides, a positive effect on the firm's financial performance could be related to a closer link to the availability of research grants, advanced technology and continuous knowledge flows.

In contrast, other scholars argue that the presence of academic people could have a negative influence in the firm's overall performance (Feeser and Willard, 1989, Cyert and Goodman, 1997, Finer and Holberton, 2002, Hytti and Maki, 2007). Specifically, the reason of this negative influence might be related to the typical lack of managerial skills of academics or, more often, to the lack of time caused by other academic commitments. Moreover, academics with a higher status in their institution may have less time to spend in the firm's managerial activities; this can result in having less influence in the firm's goals achievement and in overall low financial performances. Even conflicts between the university and business cultures might depress the performance of NTBFs.

Therefore, by considering these theories, we empirically tested the following hypotheses.

- H1: *Governance by academics might lead to lower NTBF's financial performance.*

Specifically, we define "academics" as scholars with tenure in the University (full professor, associate professor, researcher, lecturer, technician). So we have excluded Ph.D students, assistants and all other casual staff.

Therefore, in the remainder of the paper, "governance by academics" stands for the presence of at least one academic scholar (full professor, associate professor, researcher, lecturer, technician) in the board of directors of the firm.

- H2: *Higher is the academic status of the scholar involved in the governance, lower is the financial performance of the NTBF.*

Specifically, we have divided academics in two categories: one composed by full and associate professors and the other composed by all other academics (researchers, lecturers, technicians).

3. Research method.

This research has been carried out empirically on a sample of incubated New Technology Based Firms based in Italy. The sample, mainly based in Northern Italy, derives from I3P, the Turin Polytechnic's Incubator and is composed by graduated firms. With "graduated firm", we mean a NTBF grown in the incubator and get out of it after the incubation period.

I3P is a non-profit joint-stock consortium built by the Turin Polytechnic and other public entities, it was established in 1999 to promote and support the creation of high tech enterprises, grouping the innovative potential developed in research institutions in the high industrialized Piedmont area. In 2004, this incubator was awarded by Oxford University as the World Best Science-based incubator.

Usually, the maximum period of time a firm can stay in I3P is three years. At the beginning of 2010, there were 63 NTBFs graduated by I3P. The sample of firms belong to different industries and has different ownership structures. The maximum annual turnover of the considered NTBFs is not more than euro 1.5 million and the average number of employees is in the range 2-10. Because in Italy only limited companies provide public financial statements, we excluded no. 8 partnership firms and therefore our operational sample is composed by no. 55 firms. Financial data were directly collected by requesting financial statements (years 2005, 2006, 2007 and 2008) to the Turin Chamber of Commerce. Data related to years from 2005 to 2007 were available for no. 53 companies while 2008 data were available for only 44 companies including no. 3 new graduated firms.

The complete breakdown, by industry type, of the available financial data related to the sample of NTBFs is reported in the following table.

Table 1: Industry of the graduated NTBFs and available financial statements.

Industry	Available financial statements				Total NTBFs	%
	2005	2006	2007	2008		
Aerospace	1	1	1	1	1	2%
Biotech			1	1	1	2%
Building & Architecture	1	1	1	1	1	2%
Chemicals & Material	1	1	1	1	1	2%
Electronics & Automation	7	9	11	8	11	21%
Energy	3	3	3	4	4	8%
Environment & Territory	4	4	4	4	4	8%
Information Technology	26	27	27	21	27	51%
Mechanics	3	3	3	3	3	6%
Total	**46**	**49**	**53**	**44**	**53**	**100%**

The specific research operational features are presented in the following paragraphs: "Governance by academics analysis" and "financial performance analysis".

Governance by academics analysis.

In order to find out if the NTBFs were involving an academic in their governance we analysed data available in the directors' lists usually attached to NTBFs' financial statements. We crossed these data with academics' lists published on the websites of Piedmont's academic institutions. This information was available for all the firms.

To crosscheck these findings we carried out an interview with the I3P CEO. Unfortunately we weren't able to highlight the specific influence played by academics on the governance of NTBFs. This information should

have required specific surveys for each firm, which, at this stage of research, would have not been possible. As such, in our analysis, we only focused on the following items for each graduated NTBF:

- Presence of "governance by academics"; and
- eventually, status of the academic scholars involved.

A dummy variable is used to address the presence or not of "governance by academics" in each NTBFs. The same approach is used to rank the status of academics in their University. Specifically, if applicable, a value of 1 is assigned when a full or associate professor presence occurs, a value of 0 is assigned is an assistant professor, a lecturer or a technician presence occurs and no value is assigned to all other cases.
The analysis related to the financial performance of the NTBFs is discussed in the following section.

Financial Performance analysis.

We assessed the financial performance of NTBFs by focusing on quantitative measures like the ratios computed on financial structure, leverage and profitability. Usually when firms are not listed in a stock market, financial and profitability ratios can be used as main tools of analysis to assess financial performance (Chakravarthy, 1986, Finer and Holberton, 2002). However, these measures may be biased because the sample is composed by firms operating in different industries with different industry-driven levels of fixed assets, variable/fixed cost ratios and competitiveness (Porter, 1980). To overcome these limitations a comparison with specific industry ratio averages can be used (George et al., 2002).
The ratios computed on the four years data were:

- Leverage: as debts/equity ratio
- ROA: as operating profit divided by total assets
- ROE: as net profit or loss divided by total equity.

The comparison with the average industry ratios was not significant because of peculiarities of NTBFs (rapid levels of growth, technology development and high levels of start up funds absorption) and it was not used in the analysis of data.
However, in order to overcome the previous limitations and to study a unique dependent variable for financial performance, instead to develop a specific overall financial performance score, we used the Altman's Z score (Altman, 1968). The Z score values are essentially constructed to predict bankruptcy but they can be as well a valuable index of firms overall financial performances.
In detail, we used the adaptation of the score developed for privately held firms (Altman, 2002) that is:

$$Z = 0.717(X1) + 0.847(X2) + 3.107(X3) + 0.420(X4) + 0.998(X5)$$

where:

X1 = working capital/total assets
X2 = retained earnings/total assets
X3 = earnings before interest and taxes/total assets
X4 = equity book value/total assets
X5 = sales/total assets

Although the Z score measures the probability of a firm's bankruptcy, it could be taken as a variable for assessing firms' financial performance.
Another limitation about this financial analysis might be that the NTBFs' financial performance is influenced by the different lifecycle stages of the firm. Usually start-up firms' businesses became profitable and financially sustainable after some years.
Because of these arguments and considering the amount of start-up firms still present in our sample (in 2007 25% of the firms were still in the incubator and left in 2008), we decided to take into account and study:

- 2008 and 2007's Z scores for firms younger than three years;
- 2008, 2007 and 2006's Z scores for companies older than three years.

In the next section we will present and discuss the findings of this study.

4. Findings and discussion.

By addressing the independent variable of our study, we found that no. 17 NTBFs (32% of the available financials sample) have what we intend as "governance by academics". The NTBFs which involve academics with a higher status in their Institution are no. 13 (76% of the total academics involved in NTBFs). The complete breakdown of these findings is presented in the following table.

Table 2 - Presence of governance by academic and status in the University.

Academic status	Governance by academics		TOTAL	%
	No	Yes		
Not applicable	33	-	33	60%
Assistant professor /Lecturer/Technician		4	4	7%
Associate/Full professor		13	13	23%
Total (%)	**33 (60%)**	**17 (40%)**	**50**	**100%**
Notes: number of NTBFs				

NTBFs' financial data, useful to address our dependent variable for the overall financial performance were available for the majority of the sample and it covered all the no. 17 firms with academic governance. The following tables present a synthesis of financial data and computed financial ratios sorted with the academic governance presence. ROE was computed only when the total equity had a positive value.

Table 3 - Financial data synthesis and Governance by academics (descriptive statistics).

		Governance by academics		TOTAL	
		No	Yes	Mean	Std. Deviation
Annual Turnover	Y2005	234.1	248.5	238.5	348.0
	Y2006	262.9	233.9	254.0	324.4
	Y2007	349.5	444.5	378.6	470.1
	Y2008	385.9	298.0	355.9	341.6
Operating profit	Y2005	7.3	-9.6	2.1	47.1
	Y2006	0.4	-18.5	-5.4	150.8
	Y2007	4.8	53.5	19.7	447.4
	Y2008	72.1	-103.6	12.2	353.5
Total assets	Y2005	229.9	277.4	244.4	312.5
	Y2006	270.1	438.9	321.8	485.1
	Y2007	315.0	565.3	391.6	643.2
	Y2008	405.0	807.3	542.1	1,255.5
Total Equity	Y2005	69.0	33.6	58.2	141.9
	Y2006	60.4	79.6	66.3	124.7
	Y2007	56.9	149.9	85.3	176.4
	Y2008	306.2	307.2	306.5	770.3
Notes: means computed on NTBFs' available financial data (Euro/000)					

Table 4 - Financial ratios and governance by academics (descriptive statistics).

		Governance by academics		TOTAL	
		No	Yes	Mean	Std. Deviation
ROA (%)	Y2005	6.4%	0.0%	4.5%	19.0%
	Y2006	6.0%	-0.4%	4.1%	21.2%
	Y2007	10.0%	9.1%	9.8%	32.9%
	Y2008	15.3%	13.8%	14.8 %	34.5%
ROE (%)	Y2005	-6.3%	18.0%	1.1%	76.6%
	Y2006	2.3%	-27.6%	-6.8%	69.9%
	Y2007	6.4%	-12.7%	0.5%	62.3%
	Y2008	5.4%	12.4%	7.7%	46.9%
D/E ratio	Y2005	4.1	2.0	3.4	4.1
	Y2006	3.5	4.4	3.7	5.9
	Y2007	4.1	3.9	4.0	4.0
	Y2008	4.5	2.8	3.9	6.0
Notes: Means of ratios computed on available financial data					

If we only focus on financial data and ratios it might seem that NTBFs with governance by academics, hereafter "academic NTBFs", are lower performing than other firms.
However, the high rates of standard deviation could reduce, at this level, the reliability of testing our hypotheses. Taking into account the different years of collected financial data and the different age and lifecycle stage of the NTBFs we preferred to compute an overall financial performance score (namely an average of the Z score) to verify the differences between the two groups of NTBFs.
If we focus on the different academic status of the academics involved, it seems that NTBFs that involve academics with a higher status in Universities are worse performing in the first years and then outperform the other firms in the following years of activity. Again, the low number of "academic NTBFs" which involve people with lower academic status might affect the reliability of this finding.
The resulting ratios about these last argumentations are presented in the following table:

Table 5 - Financial ratios and academic status of "academic NTBFs" (descriptive statistics).

		Academic Status		**TOTAL**	
		Assistant professor/ Lecturer/ Technician	Associate/ Full professor	Mean	Std. Deviation
ROA (%)	Y2005	11.8%	-1.8%	0.1%	19.8%
	Y2006	8.1%	-2.5%	-0.4%	21.2%
	Y2007	8.1%	9.4%	9.1%	32.9%
	Y2008	4.8%	20.2%	18.0%	34.5%
ROE (%)	Y2005	41.7%	5.3%	10.9%	78.2%
	Y2006	29.7%	-41.9%	-27.6%	57.7%
	Y2007	23.6%	-21.7%	-12.7%	57.4%
	Y2008	8.1%	23.1%	20.8%	46.9%
D/E ratio	Y2005	4.9	26.4	23.4	43.9
	Y2006	5.3	4.1	4.4	5.9
	Y2007	5.6	3.5	3.9	4.0
	Y2008	6.1	2.4	3.0	6.0
Notes: Means computed on no. 17 firms.					

To overcome the previous limitations and to have a more comprehensive financial performance variable, the Altman's Z score was computed on the four years data. As can be seen in the following tables, the means' values are quite different between academic NTBFs and non academic NTBFs and between higher and other status of the academics involved.

Table 6 – Z scores and Governance by academics in NTBFs (descriptive statistics).

	Governance by academics		**TOTAL**			
Z Score	No	Yes	Mean	Std. Deviation	Min	Max
Y2005	1.87	1.67	1.81	1.30	-1.45	4.51
Y2006	1.94	1.49	1.81	1.32	-1.20	4.80
Y2007	2.27	1.99	2.18	1.73	-2.40	7.13
Y2008	2.67	1.49	2.28	1.79	-1.49	8.38
Notes: Means computed on no. 17 NTBFs.						

Table 7 – Z scores and academic status of academic NTBFs (descriptive statistics).

	Academic status		**TOTAL**			
Z Score	Assistant professor/ Lecturer / Technician	Associate / Full professor	Mean	Std. Deviation	Min	Max
Y2005	1.96	1.62	1.67	1.34	-.62	4.37
Y2006	1.85	1.41	1.49	1.45	-.96	3.73
Y2007	2.22	1.93	1.99	1.67	-1.74	5.09
Y2008	0.64	1.72	1.49	1.64	-1.49	3.63
Notes: means computed on no. 17 NTBFs.						

We validated our previous findings by testing the differences between the Z scores means of the four different groups (governance by academics or not, higher or other academic status) using the t-test statistic.
The only statistically significant ($p \leq 0.05$) differences were those related to the year 2008 financial data. Significant differences were found between the "governance by academics" and other governance Z score means and between the 'higher academic status' and other academic status of 2008 financial data.
As discussed before, an important role on financial data / ratios is played by the age of the firm and thus by the graduation/exit date from the incubator (Rothaermel and Thursby, 2005b).
Although the differences in the means were significant, given that every firms are in different lifecycle stages we computed an overall Z score as follows:

- the average between 2008 and 2007's Z scores for firms younger than three years;
- the average between 2008, 2007 and 2006's Z scores for companies older than three years.

When using the Z score, it is important to set out some levels of performance discrimination, in particular we used the discrimination range stated by Altman's further works (Altman, 2002):

- 'Safe' zone: $Z > 2.99$
- 'Grey' zone: $1.8 < Z < 2.99$
- 'Distress' zone: $Z < 1.80$.

These levels were used as ranges for high, medium and low firms' financial performance.
A breakdown of the resulting levels of the financial performance levels is presented in the following table.

Table 8 – Levels of financial performance scores and academic governance of NTBFs.

		Governance by academics		
		No	Yes	Total
Financial performance (Average Z score)	High	9 (25.0%)	2 (11.8%)	11 (20.8%)
	Medium	13 (36.1%)	8 (46.1%)	21 (39.6%)
	Low	14 (38.9%)	7 (41.2%)	21 (39.6%)
	TOTAL	**36 (100%)**	**17 (100%)**	**53 (100%)**
Notes: number of NTBFs.				

Table 9 – Levels of financial performance scores and academic status of academic NTBFs.

		Academic Status		
		Assistant professor/ Lecturer/ Technician	Associate / Full professor	Total
Financial performance (Average Z score)	High	1 (25%)	1 (7.7%)	2 (11.8%)
	Medium	1 (25%)	7 (53.8%)	8 (47.1%)
	Low	2 (50%)	5 (38.5%)	7 (41.2%)
	TOTAL	**4 (100%)**	**13 (100%)**	**17 (100%)**
Notes: number of academic NTBFs.				

Again, from the Z score level analysis, it seems that academic NTBFs are lower performing than other firms and this performance is much lower when the status of the academic involved in University is higher.
To highlight other possible relations, we carried out a linear correlation analysis. Descriptive statistics of the final variables involved in the study and resulting correlation coefficients are presented in the following tables.

Table 10 – Main variables study, descriptive statistics.

Main variables - Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
1. Governance by academics	53	0	1	0.32	0.47
2. Academic status	17	0	1	0.76	0.44
3. Financial performance (Z score)	53	-1.80	6.28	1.85	1.44

Table 11 – Analysis of correlation.

	Pearson's correlation coefficients		
Research Variables	1	2	3
1. Governance by academics	1		
2. Academic status	n/a	1	
3. Financial performance (Z Score)	-0.299 *	0.155	1
* $p \leq 0.05$			

Although with not so much significance ($p \leq 0.05$), financial performance and governance by academics are in a certain way negative correlated; this means that the presence of academics in the NTBFs' boards has a negative impact on economic and financial performance.
This may sound odd but it could be explained by observing that, usually, NTBFs linked with Universities are involved in high risk industries which require a higher rate of resources and need to overcome unexpected difficulties to reach a positive cash flow in a short time.
Usually, these resources are employed to develop new technologies and advanced knowledge, which can be accounted only in part as intangibles assets and quite often are recognized as research expenses (because of the accounting principles stared in Italian GAAP) leading to bad financial statements results.
On the other hand, we weren't able to find any correlation between the role of academics in their institution and the firms' financial performance. This finding is in contrast with our former previous researches that highlighted a negative correlation. The reason might be explained as in our previous studies less financial data were available (no data for year 2008 and some data for year 2007 were missing). As seen in the previous ratios' tables, academic firms governed by higher-status academics are worse performing in the first years of analysis (years 2005, 2006 and 2007) while in the last period (year 2008) they dramatically improved their performance. Further possible explanations are presented in the next section.

5. Conclusions.

This study contributes to the considerable debate developed, in the last years, on the outcomes of firm–university linkages. Particularly, we focused our analysis on New Technology Based Firms (NTBFs) grown in Universities' incubators.
Previous scholars (George *et al*., 2002) pointed out some difficulties in addressing the effect of university-business link using different types of business performance. The issues are mainly related to the unclearness of the measures and values used to evaluate academic influences. As a matter of fact, revenue, is an accepted financial performance metric for more mature companies, but it can be not suitable for incubators' context where firms are almost in their start up phase (Rothaermel and Thursby, 2005a).
In this study we used a wider measure of financial performance able to highlight the different dimensions related to financial performance (i.e. profitability, financial position and financial structure). This performance measure is namely the Altman's Z score and although it has been developed to assess the survival skills of a firm it can be used to reflect the overall financial performance of a firm (Farjoun, 2002).
The study of the "governance by academics" and its relationwith the NTBFs financial performance highlighted some interesting results. The analysis of our findings address, that in a certain way, a little negative correlation can be found between the presence of the "governance by academic" and the financial performance of the NTBFs. This allows to partially validate our first hypothesis "*Governance by academics might lead to lower NTBF's financial performance*".
This findings might sound odd, but the negative relation between the presence of academics as NTBFs' directors and the financial performance can be explained as follows.
On the one hand, an important role is played by the nature of the business of a NTBF. Usually, firms with governance by academics are more related to advanced technologies and risky industries because of the specific knowledge availability of Universities' resources. Therefore, the financial performance of the academic NTBFs is subject to a high rate of uncertainty and becomes eventually more effective quite a long time after the start-up stage. The result is a lower financial performance which lasts until the resources invested and the developed researches are finally able to give some effective outcomes in term of innovations and selling products.
On the other hand, the special status of academics, and particularly of the Italian ones, could add some argumentations to the negative relation between academic governance and financial performance. Usually, academics are allowed to keep one foot in two shoes. In other words, is quite common that professors may continue their academic activity while acting as shareholders, directors, consultants or advisors of a firm in the meantime.

Previous studies pointed out that academic scholars prefer to maintain university ties to share ongoing research results and gain access to the scientific knowledge pool, while, in the meantime, receive the benefits of dividends payout (George *et al*., 2002). Furthermore, this particular status may explain the low risk awareness of academics despite the high uncertainty of the typical business of incubated NTBFs (Renault 2006).
In addition, even the lack of experience in general management (Wright *et al*., 2007) and the lack of managerial skills (Vohora *et al*., 2004) were addressed in past research and could be another explanation of low the financial performance. Specifically, this issue gets more importance if academics are related to Universities focused in technical studies as the case of our sample where most of the academics had an engineering background.
About the role of the academics involved in the NTBFs' governance, we weren't able to validate our second hypothesis "*Higher is the academic status of the scholar involved in the governance, lower is the financial performance of the NTBF*".
We expected to find a negative relation because, usually, academics with a higher position in their institutions are charged with a lot of commitments and don't have much time to devote to the firm management.
People with lower status in University like assistant professors or lecturers usually have lower salaries than full or associate professors, and for this reason might be more concerned to achieve positive returns from firms they are eventually involved in, even in the start-up stage.
Full or associate professors, although might not be very concerned in the management of the firm, during the start-up stage might facilitate industry relations, access to funding and further grants. Higher status academics, because of their position and their different commitments and involvement, might invest in some risky business regardless of the initial returns. Therefore innovations, patents, processes and products developed from risky businesses could lead to increasing returns for their investors. This might explain the improvement of the 2008's NTBFs' financial performance analysis where higher academic roles were involved.
This study may have some interesting implications. Given the crucial value of innovation and the role played by New Technology Based Firms' in today's economy, more attention must be addressed to the effectiveness of University-business links and, particularly, to the role played by the academics involved.
Potential benefits of "governance by academics" could improve companies' performance only if academics act not only as 'a knowledge provider' but also as real tools of governance, becoming really committed in the management and in the business activities of a firm.
In other words academics involved in NTBFs might forget about their ordinary commitments (i.e. teaching, supervising activities) in order to spend more time in the firms' managerial tasks.
These findings, although based on a sample of Italian firms, shall address the concerns of Universities and Polytechnics worldwide, major attention shall be given in stating and issuing appropriate policies with regard to external commitments involving academic staff.

6. Limitations and further research.

It is possible to highlight different limitations of the study. First of all, the most recent available financial data for companies were those related to 2008. Therefore the current analysis was performed without taking into account year 2009 financial performance. Unfortunately, in Italy, financial statements related to a specific period are available for consultation after 6-8 months.
Moreover, some of the graduated companies (25% of the sample), during 2007, were still in the incubator and were just leaving their start-up stage.
The negative relation between governance and financial performance could had been influenced by the nature of the academics involved. In other words, the academics in our sample have an engineering background and this could justify the lack in management and governance skills.
Another possible limitation is that, in the sample of firms, there is a few number of NTBFs governed by assistant professors or lecturers.
Further studies might address the generalizability of these findings. The studied sample is all from one incubator (namely 'I3P') which is mainly focused on engineering sciences and is based in Italy. For this reason we are extending this study to firms related to other University incubators.
Further research could also highlight the real role played by academics inside the NTBFs, in the governance and in the management.

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